

ABSTRACT OF THE DISCLOSURE

A method of producing parts from powdered metals is disclosed, comprising the following steps. A metallurgical powder is provided, consisting of iron, 0.3-1.0 weight percent carbon, 0-4 weight percent chromium, 0-3 weight percent copper, 0.5-1.5 weight percent molybdenum, 0.5-4.5 weight percent nickel, 0-1.0 weight percent manganese, and 0-1.5 weight percent silicon. Metal powders are made by atomization and mixing. The powder metal parts are made by compacting, pre-sintering, profile/form grinding, sinter furnace hardening, and secondary operations. Profile/form grinding generates profiles, which can not be formed by compaction tooling, such as undercut. The specific pre-sinter cycle makes parts strong enough for profile grinding with prolonged tool life. Powder metal parts made by this invention are also disclosed.